



**Figure 10.** Fluorescent detection response characteristic functions. In all figures, middle (blue) curve is the reference function with parameters of  $(a_0, a_1, a_2, a_3) = (0, 100, -1, 1)$ . Also, in all figures, the x-axis is the input signal intensity, and y-axis is the observed signal intensity, and both are in  $\log_{10}$ -scale. (a) Delayed response at various levels, with fixed  $a_0 = 0$  and  $a_3 = 1$ . (b) Different amplification levels, with fixed  $a_0 = 0$  and  $a_2 = -1$ . (c) Different response curvature, with fixed  $a_0 = 0$  and  $a_3 = 1$ . (d) Some other parameter settings, with fixed  $a_3 = 1$ .